the rotary or operating part of the fan consists of a shaft with eight radial arms set back on a curve at the extremities of which are fastened iron wind boards, three feet wide and five feet long, in the direction of the axis; the extremities of the wind boards are six feet from the center and consequently describe a circle of twelve feet diamter. The shaft extends beyond the casing and rests on pulley blocks, and on the driving side it is lengthened six feet to receive the driving pulley and remove all obstruction to the easy entrance of air to the fans; the motion is imparted by a belt passing over the pulley, four feet in diameter, with ten-inch face, on the end of the shaft, the arms and boards revolve within the wooden casing, the circumference of which instead of being concentric with the shaft, describes a curve of increasing diameter and forms outside the wind boards a channel of constantly enlarging capacity towards the point of delivery. The casing is therefore scroll-shaped, this space being six inches in front and enlarging to three feet at the bottom. The height of the casing from the floor is eighteen feet. The cross-sectional area is equal at the point of delivery to forty-two square feet. The opening in each side of the fan casing, for the inlet of air, is six feet in area. This whole machinery is placed in a room, the floor of which is on a level with the floor of the main air duct, and the air is admitted through a large open space, double the area of both inlets, and properly guarded.